

MID-TERM EXAM
OCTOBER 11, 1988

NAME _____

MULTIPLE CHOICE

1. The trapezius muscle

- ADCE*
- ☒ A. receives its motor supply from the accessory nerve
 - ☒ B. inserts in part upon the humerus
 - ☒ C. rotates the scapula
 - ☒ D. all of the above
 - ☒ E. only A and C above

2. The triangle of auscultation is formed in part by borders of

- E*
- ☒ A. trapezius muscle
 - ☒ B. latissimus dorsi muscle
 - ☒ C. rhomboideus minor muscle *may*
 - ☒ D. all of the above
 - ☒ E. only A and B above

3. The latissimus dorsi muscle

- BCE*
- ☒ A. receives its motor supply from the accessory nerve
 - ☒ B. medially rotates the humerus at the shoulder joint *T*
 - ☒ C. adducts the humerus at the shoulder joint *T*
 - ☒ D. only A and C above
 - ☒ E. only B and C above

4. The intervertebral foramina are associated with

- D*
- ☒ A. cervical vertebrae
 - ☒ B. thoracic vertebrae
 - ☒ C. lumbar vertebrae
 - ☒ D. all of the above
 - ☒ E. only A above

5. "Hunchback" refers to

- B*
- ☒ A. lordosis
 - ☒ B. an abnormal thoracic curvature
 - ☒ C. an abnormal lumbar curvature
 - ☒ D. only A and B above
 - ☒ E. only A and C above

6. The odontoid process is
- ~~A.~~ the "captured" body of C1
 - ~~B.~~ part of the axis vertebra
 - ~~C.~~ also known as the dens
 - ~~D.~~ all of the above
 - E. only A and C above

7. The muscles of the deep, intrinsic group, the "true" back muscles are

- A. concerned with the maintenance of upright posture
- ~~B.~~ supplied by branches of the dorsal primary rami
- C. control the movements of the vertebral column
- D. all of the above
- E. only A and C above

8. Muscles that insert upon the mastoid process are

- ~~A.~~ sternocleidomastoid
- ~~B.~~ splenius capitis
- C. longissimus capitis
- D. all of the above
- E. only A above

9. The suboccipital triangle

- A. is bounded by obliquus capitis inferior, obliquus capitis superior and rectus capitis major
- ~~B.~~ contains the vertebral artery
- C. contains the suboccipital nerve
- ~~D.~~ all of the above
- E. only A and B above

10. The arachnoid layer of the spinal meninges is

- A. avascular
- ~~B.~~ separated from the dura mater by the subarachnoid space
- C. composes the denticulate ligament
- ~~D.~~ all of the above
- ~~E.~~ only A and B above

11. Which of the following is (are) NOT (a) synovial joint(s)?

- ~~A.~~ the sternoclavicular joint
- ~~B.~~ the anterior intervertebral joint
- C. the proximal tibiofibular joint
- D. the proximal radioulnar joint
- E. only C and D above

Rheumatoid arthritis is characterized by

- A. pain
- B. increased bone density adjacent to the joint surfaces
- C. inflammation of synovial tissues
- D. all of the above
- E. only A and C above

13. The "football triad" or "clipping" injury involves rupture or damage to the

- A. medial collateral ligament
- B. medial meniscus
- C. posterior cruciate ligament
- D. all of the above
- E. only A and B above

14. The vertebral column includes

- A. symphysial joints
- B. synovial joints
- C. syndesmoses
- D. all of the above
- E. only A and B above

15. Mature articular cartilage is

- A. avascular
- B. usually calcified adjacent to the bone it covers
- C. nourished by synovial fluid
- D. all of the above
- E. only A and C above

16. All of the following contain paranasal sinuses except the

- A. maxilla
- B. sphenoid
- C. temporal
- D. frontal
- E. ethmoid

17. Which of the following is NOT part of the ethmoid bone?

- A. Perpendicular plate
- B. cribriform plate
- C. crista galli
- D. air cells
- E. inferior nasal concha

18. The anterior fontanelle is

- A. triangular in shape
- B. related to the coronal suture
- C. useful for sampling CSF (cerebrospinal fluid)
- D. all of the above
- E. only B and C above

19. A patient arrived in the emergency room with a stab wound in his inferior axillary region. Upon examination, he is unable to lift his arm above a 45° angle and the medial border of his scapula protrudes posteriorly. Which nerve was severed?

- A. suprascapular
- B. long thoracic
- C. lower subscapular
- D. thoracodorsal
- E. axillary

20. Which structure would NOT be associated with the cubital fossa?

- A. brachial artery
- B. biceps brachii tendon
- C. Coracobrachialis
- D. Median Nerve
- E. Brachioradialis

21. Branches of the second part of the axillary artery include

- A. lateral thoracic
- B. subscapular
- C. both
- D. neither

HTLSAP

22. Branches of the first part of the subclavian artery include

- A. lateral thoracic
- B. vertebral
- C. both
- D. neither

23. The following statements about the radial nerve are true except

- A. Arises from the posterior cord of the brachial plexus
- B. Runs in the spiral groove of the humerus
- C. Runs with the posterior humeral circumflex artery
- D. Supplies sensation to part of the dorsum of the hand
- E. Supplies the posterior compartment of the arm

4. The following statements about the median nerve are true except
- A. Does not supply any muscles in the arm
 - B. Supplies all muscles in the thenar eminence
 - C. Supplies 2 lumbrical muscles
 - D. Supplies sensation to the lateral palmar hand
 - E. Supplies all muscles in the extensor compartment of the forearm
25. Coursing through the radial groove of the humerus with the radial nerve is the
- A. Profunda brachii artery
 - B. Brachial artery
 - C. Both
 - D. Neither
26. Attaching to the coracoid process of the scapula is (are)
- A. Pectoralis major
 - B. Short head of biceps brachii
 - C. Both
 - D. Neither
27. The deep palmar arch is formed mainly by the
- A. Ulnar artery
 - B. Radial artery
 - C. Brachial artery
 - D. Proper palmar digital arteries
 - E. Palmar metacarpal arteries
28. The importance of the anatomical snuff box is that
- A. The radial artery runs through it
 - B. The most frequently fractured carpal bone forms the floor
 - C. Both
 - D. Neither
29. Tendons of muscles contributing to the "rotator cuff" do NOT include:
- A. subscapularis
 - B. supraspinatus
 - C. infraspinatus
 - D. teres minor
 - E. teres major

30. The tendon of which muscle is a good guide to finding the ulnar artery at the wrist?

- A. Palmaris longus
- B. Flexor carpi ulnaris
- C. Flexor carpi radialis
- D. Flexor pollicis longus
- E. Extensor carpi radialis longus

31. A tumor of the pituitary gland could involve all but one of the following closely related structures.

- A. optic chiasma
- B. ophthalmic artery
- C. sympathetic nervous system of orbit
- D. cavernous sinus structures
- E. olfactory nerves

32. All but one of the following enter the orbit via the superior orbital fissure.

- A. mandibular division of trigeminal nerve
- B. oculomotor nerve
- C. trochlear nerve
- D. abducent nerve
- E. ophthalmic division of trigeminal nerve

33. Which of the following nerves is associated with the foramen magnum?

- A. facial nerve
- B. glossopharyngeal nerve
- C. spinal accessory nerve
- D. vagus nerve
- E. trigeminal nerve

34. All but one of the following muscles is innervated by the trigeminal nerve

- A. masseter
- B. buccinator
- C. internal (medial) pterygoid
- D. external (lateral) pterygoid
- E. temporalis

35. All but one of the following are branches of the external carotid artery.

- ~~A.~~ facial
- ~~B.~~ ophthalmic
- ~~C.~~ superficial temporal
- ~~D.~~ maxillary
- ~~E.~~ occipital

S
F
L
AP
PP
ST
M

36. Which of the following is not true about the emissary veins?

- ~~T~~ A. they connect intra-and extracranial veins
- ~~T~~ B. blood can flow in either direction in these veins
- C. they are found in various areas of the head (e.g. parietal, mastoid, etc.)
- ~~D.~~ are identical to the diploic veins in location
- ~~E.~~ None of the above is true

37. The major (sensory) nerve supply from the side of the scalp and associated with the temporal and parietal areas is via.

- ~~A.~~ supraorbital nerve
- ~~B.~~ supratrochlear nerve
- C. auriculotemporal nerve
- ~~D.~~ great occipital nerve
- E. facial nerve

38. Which is true regarding the parotid gland?

- ~~A.~~ its duct crosses the masseter muscle and enters the mouth opposite the upper incisor tooth
- ~~B.~~ it has no relationship to any ear structures
- ~~C.~~ its deep process relates it to the 9th, 10th, 11th and 12th cranial nerves
- ~~D.~~ it has no relationship to the pharynx
- ~~E.~~ its fibrous capsule is loose and easily detachable

39. The secretomotor innervation of the parotid gland is parasympathetic via:

- ~~A.~~ cranial nerve V (trigeminal)
- ~~B.~~ cranial nerve VII (facial)
- ~~C.~~ cranial nerve X (vagus)
- ~~D.~~ cranial nerve IX (glossopharyngeal)
- ~~E.~~ cranial nerve XII (hypoglossal)

1. All but one of the following is correct:

- A. The chorda tympani nerve joins the lingual nerve in the infratemporal region
- ☒ B. The buccal nerve from the mandibular division of V supplies the buccinator muscle
- ☒ C. The inferior alveolar nerve is sensory from the lower teeth
- ☒ D. The mylohyoid nerve is a twig off of the inferior alveolar nerve
- E. Cutting the auriculotemporal nerve in the infratemporal fossa would involve both secretomotor and sensory fibers

41. Which of the following muscles protrudes the mandible?

- ☒ A. lateral pterygoid muscle
- B. anterior belly of digastric muscle
- C. temporalis muscle
- D. mentalis muscle
- ~~E. platysma~~

42. The middle meningeal artery enters the skull via:

- A. foramen ovale
- B. foramen lacerum
- ☒ C. foramen spinosum
- D. foramen rotundum
- E. sphenopalatine foramen

43. The otic ganglion in the infratemporal fossa is functionally associated with which cranial nerve?

- ☒ A. glossopharyngeal n. (IX)
- ~~B. vagus n. (X)~~
- C. facial n. (VII)
- ~~D. trigeminal n. (V)~~
- ~~E. accessory n. (XI)~~

44. Which of the following is not associated with the chorda tympani nerve?

- ☒ A. taste from the anterior 2/3 of tongue
- ☒ B. innervation of the submandibular and sublingual glands
- ☒ C. cell bodies associated with the geniculate ganglion (found in wall of middle ear)
- D. general sensation from mouth and anterior 2/3 of tongue
- ☒ E. enters infratemporal fossa from middle ear

Which of the following is not found in the infratemporal region?

- ☒ A. pterygoid plexus of veins
- ☐ B. buccal nerve (of trigeminal)
- ☐ C. middle meningeal artery
- ☐ D. auriculotemporal nerve
- ☐ E. deep portion of parotid gland

46. The roof of the external and internal auditory meatuses are related to the:

- ☐ A. posterior cranial fossa
- ☐ B. middle cranial fossa
- ☒ C. frontal lobes of the brain
- ☐ D. anterior cranial fossa
- ☐ E. parietal bones

47. All but one are related to the medial wall of the middle ear.

- ☒ A. oval window
- ☒ B. round window
- ☐ C. promontary
- ☒ D. epitympanic recess
- ☒ E. tympanic plexus

48. Posterior wall of the middle ear has all but one of the following:

- ☐ A. pyramidal eminence
- ☐ B. facial nerve
- ☐ C. aditus to mastoid antrum
- ☒ D. opening for chorda tympani nerve to enter middle ear
- ☐ E. tensor tympani muscle

49. All but one belong to the bony labyrinth

- ☐ A. cochlea
- ☐ B. vestibule
- ☐ C. semicircular canals
- ☐ D. basilar membrane
- ☒ E. modiolus

50. Membranous labyrinth contains all but one of the following:

- ☐ A. saccule
- ☒ B. utricle
- ☐ C. ductus reuniens
- ☐ D. aqueduct of the vestibule
- ☐ E. endolymphatic sac

The most prominent cranial nerve associated with the medial and posterior walls of the middle ear is

- ☒ A. facial nerve (VII)
☐ B. acoustic nerve (VIII)
☐ C. vestibular nerve (VIII)
☐ D. vagus nerve (X)
☐ E. trigeminal nerve (V)

K-TYPE QUESTIONS

- A. if only 1, 2, and 3 are correct
B. if only 1 and 3 are correct
C. if only 2 and 4 are correct
D. if only 4 is correct
E. if ALL are correct

52. The tendons of extensor muscles which bound the anatomical snuff box include:

- ☒ 1. Extensor pollicis brevis
☒ 2. Abductor pollicis longus
☒ 3. Extensor pollicis longus
☐ 4. Adductor pollicis

53. Which of the following structures passes superficial to the flexor retinaculum of the wrist?

- ☒ 1. Radial artery
☒ 2. Tendon of flexor carpi radialis
☒ 3. Median nerve
☒ 4. Tendon of palmaris longus

54. Injury of the radial nerve just proximal to the elbow joint would cause

- ☒ 1. failure to produce extension of the forearm (elbow)
☒ 2. wrist drop
☒ 3. failure to adduct and abduct the fingers
☒ 4. anesthesia of part of the dorsum of the hand

55. The ulnar nerve supplies:

- ☒ 1. lateral half of flexor digitorum superficialis
☒ 2. lateral half of flexor digitorum profundus
☒ 3. flexor carpi radialis
☒ 4. flexor carpi ulnaris

- A. If only 1, 2, and 3 are correct
- B. If only 1 and 3 are correct
- C. If only 2 and 4 are correct
- D. If only 4 is correct
- E. If ALL are correct

56. The nerves originating from the upper trunk of the brachial plexus include:

- B
- 1. Nerve to subclavius
 - 2. Phrenic
 - 3. Suprascapular
 - 4. Dorsal scapular

57. Motor nerves of the cervical plexus include:

- B
- 1. Phrenic
 - 2. Lesser occipital
 - 3. Ansa cervicalis
 - 4. Transverse cervical

58. Lateral rotators of the arm include:

- C
- 1. Teres Major
 - 2. Teres Minor
 - 3. Subscapularis
 - 4. Infraspinatus
- MS 1, 2, 3
1, 3

59. Structures seen passing through the quadrangular space of the upper limb include:

- B
- 1. Axillary nerve
 - 2. Circumflex scapular artery
 - 3. Posterior humeral circumflex artery
 - 4. Axillary artery
- 1, 2, 3, 4

60. The musculo cutaneous nerve

- C
- 1. is one of the 2 terminal branches of the ^{lat} medial cord of the brachial plexus
 - 2. pierces the coracobrachialis muscle
 - 3. becomes the medial antebrachial cutaneous nerve
 - 4. is the motor nerve of the anterior compartment of the arm

- A. If only 1, 2 and 3 are correct
B. If only 1 and 3 are correct
C. If only 2 and 4 are correct
D. If only 4 is correct
E. If ALL are correct

61. Muscles important in abduction of the arm include:

- C 9
D
1. Pectoralis major
2. Supraspinatus
3. Pectoralis minor
4. Deltoid

62. Which of the following arteries can be seen passing through the posterior triangle of the neck?

- A
B
1. transverse cervical
2. occipital
3. suprascapular
4. facial

63. The ansa cervicalis nerve supplies

1. sternothyroid muscle
2. omohyoid muscle
3. sternohyoid muscle
4. thyrohyoid muscle

64. Enclosed within the carotid sheath are

1. vagus nerve
2. deep cervical lymph nodes
3. internal carotid artery
4. internal jugular vein

65. A stab wound in the posterior triangle of the neck could damage

- A
1. suprascapular nerve
2. accessory nerve
3. great auricular nerve
4. greater occipital nerve

66. The interval between the first and second metatarsals contains

- A B
1. terminal branches of deep peroneal nerve
2. communicating artery between dorsalis pedis and lateral plantar artery
3. first dorsal interosseus muscle
4. first plantar interosseus muscle

- A. If only 1, 2 and 3 are correct
- B. If only 1 and 3 are correct
- C. If only 2 and 4 are correct
- D. If only 4 is correct
- E. If ALL are correct

67. Branches of the femoral nerve supply

- 1. sensation to medial side of foot
- ~~2.~~ tensor fascia lata
- 3. vastus lateralis, intermedius and medialis
- ~~4.~~ part of adductor magnus

68. Contents of the femoral triangle include

- 1. profunda femoris artery
- 2. great saphenous vein
- 3. femoral canal
- 4. femoral sheath

69. External rotation of the hip is produced by

- 1. gluteus medius NO
- 2. piriformis ✓
- 3. tensor fascia lata NO
- 4. quadratus femoris /

70. Regarding the bony orbit

- 1. The maxillary sinus is related to the floor of the orbit as is the maxillary division of the trigeminal nerve.
- ~~2.~~ The floor of the orbit includes a small piece of the palatine bone.
- 3. The inferior orbital fissure leads into the infratemporal region.
- 4. The lacrimal bone houses the lacrimal gland.

71. Regarding the muscles of the orbit and eyeball

- 1. The ciliary muscles receive postganglionic innervation from the ciliary ganglion via short ciliary nerves.
- 2. The inferior oblique muscle is innervated by the ophthalmic division of cranial nerve V.
- 3. The levator palpebrae superioris muscle is innervated by the superior division of the oculomotor nerve.
- ~~4.~~ The superior oblique muscle turns the eyeball so the pupil faces up and out (lateral).

- A. If only 1, 2, and 3 are correct
- B. If only 1 and 3 are correct
- C. If only 2 and 4 are correct
- D. If only 4 is correct
- E. If **ALL** are correct

72. Regarding nerves of the orbit and its contents:

- 1. The long ciliary nerves are motor and are a part of the oculomotor nerve.
- F 2. The sympathetic postganglionic fibers pass thru the ciliary ganglion without synapse.
- T 3. The frontal nerve is a branch of the oculomotor nerve.
- C 4. The lacrimal gland receives its secretomotor fibers from the facial nerve via the pterygopalatine ganglion.

73. Regarding the eyelids:

- 1. The palpebral conjunctiva lines the deep surface of the eyelid.
- B 2. A sty or sebaceous cyst usually presents itself internally against the eyeball. *ext*
- 3. Drooping of the eyelid may possess both oculomotor nerve involvement as well as sympathetic nerve involvement.
- 4. Tenon's fascia or capsule is associated with eyelid.

74. Regarding the eyeball and its composition:

- D 1. The ora serrata is associated with the choroid coat.
- C 2. The posterior chamber of the eyeball contains vitreous humor
- 3. The central artery of the eyeball supplies the choroid vascular layer
- T 4. The short ciliary arteries supply the choroid vascular layer.

75. Regarding the retina:

- 1. The macula lutea and optic disc are synonymous areas.
- C T 2. The fovea centralis lies in the middle of the macula lutea.
- 3. The retina terminates midway around the inner surface of the eyeball.
- T 4. The retina has both a visual and nonvisual part.

ST ANSWER

76. The arterial anastomosis around the hip joint (cruciate anastomosis) could potentially involve all of the following **EXCEPT**:

- A. superior lateral genicular —
- B. medial femoral circumflex
- C. lateral femoral circumflex
- D. inferior gluteal artery
- E. first perforating artery

77. Which is not true regarding gluteus maximus?

- A. is a powerful hip extensor in running
- B. inserts primarily into the fascia lata
- C. covers the ischial tuberosity when the hip is flexed
- D. is innervated by the inferior gluteal nerve
- E. takes a portion of its origin from the sacrum

78. Which of the following is not found in the popliteal fossa?

- A. common peroneal nerve
- B. tibial nerve
- C. lesser (short) saphenous vein
- D. saphenous nerve
- E. popliteal vein

79. All of the following muscles may produce movement in both the hip and knee joints **EXCEPT**:

- A. gracilis ✓
- B. adductor magnus ✓
- C. rectus femoris ✓
- D. biceps femoris ✓
- E. semimembranosus ✓ extend hip + flex leg

80. All of the following are contained in the subsartorial (adductor; Hunter's) canal **EXCEPT**:

- A. profunda femoris artery
- B. femoral artery
- C. femoral vein
- D. saphenous nerve
- E. nerve to vastus medialis

ST ANSWER

81. "Foot-drop" is a condition in which the plantar flexor muscles are unopposed. This condition may be caused by damage to which of the following nerves?

- A. medial plantar
- B. lateral plantar
- C. sural
- D. tibial
- E. common peroneal

82. Anterior tibial syndrome (a form of shin splints) is due primarily to compression of the arterial supply by swelling of the muscles within this myofascial compartment. The affected vessel is:

- A. peroneal artery
- B. anterior tibial artery
- C. posterior tibial artery
- D. popliteal artery
- E. dorsalis pedis

83. Structures which cross the ankle joint posterior to the medial malleolus include all of the following EXCEPT:

- A. tendon of flexor hallucis longus
- B. tendon of flexor digitorum longus
- C. tendon of flexor digitorum brevis
- D. tibial nerve
- E. posterior tibial artery

84. All of the following have attachment to the calcaneus EXCEPT:

- A. quadratus plantae
- B. abductor hallucis
- C. abductor digiti minimi
- D. soleus
- E. adductor hallucis

85. Pott's Fracture involves a) fracture of the fibula 4-7 cm proximal to the lateral malleolus and b) rupture of the deltoid ligament or avulsion of the medial malleolus. This condition is most likely produced by forced

- A. plantar flexion
- B. dorsiflexion
- C. eversion
- D. inversion
- E. lateral rotation

CHOOSE BEST ANSWER FROM LIST AT RIGHT FOR QUESTIONS 86-89. A CHOICE MAY BE USED ONCE, MORE THAN ONCE OR NOT AT ALL.

- | | | | | |
|--------------------------------------|----------------------------------|------------------------------------|---------------|-----------------------|
| <input checked="" type="radio"/> 86. | Extensor hallucis longus | <input checked="" type="radio"/> C | A. | Femoral nerve |
| <input checked="" type="radio"/> 87. | Adductor hallucis | <input checked="" type="radio"/> D | B. | Obturator nerve |
| <input checked="" type="radio"/> 88. | Adductor brevis <i>obturator</i> | <input checked="" type="radio"/> B | C. | Deep peroneal nerve |
| <input checked="" type="radio"/> 89. | Adductor magnus <i>Tibial</i> | <input checked="" type="radio"/> B | D. | Lateral plantar nerve |
| | | | E. | None of above (A-D) |

FROM THE LIST AT RIGHT SELECT THE NERVE WHICH ACCOMPANIES THE ARTERIES LISTED FOR QUESTIONS 90-93. A CHOICE MAY BE USED ONCE, MORE THAN ONCE OR NOT AT ALL.

- | | | | | |
|--------------------------------------|-------------------------|------------------------------------|---------------|------------------------|
| <input checked="" type="radio"/> 90. | Great saphenous vein | <input checked="" type="radio"/> C | A. | Sural nerve |
| <input checked="" type="radio"/> 91. | Small saphenous vein | <input checked="" type="radio"/> A | B. | Deep peroneal nerve |
| <input checked="" type="radio"/> 92. | Anterior tibial artery | <input checked="" type="radio"/> B | C. | Saphenous nerve |
| <input checked="" type="radio"/> 93. | Posterior tibial artery | <input checked="" type="radio"/> D | D. | Tibial nerve |
| | | | E. | Superior gluteal nerve |

TRUE OR FALSE

94. The conus medullaris and cauda equina are the same structure

- ☒ B
- | | |
|-------------------------------------|-------|
| A. | true |
| <input checked="" type="radio"/> B. | false |

95. If you are doing a lumbar puncture, it helps to know that an imaginary line between the iliac crests will intersect the spinous process of L4.

- ☒ A
- | | |
|-------------------------------------|-------|
| <input checked="" type="radio"/> A. | true |
| B. | false |

96. The joints between the major bones of the neurocranium ("brain-case") are classified as cartilaginous joints

- ☒ B
- | | |
|-------------------------------------|-------|
| A. | true |
| <input checked="" type="radio"/> B. | false |

7. The function of the musculature of the anterior compartment of the leg during walking is to

- A. produce dorsiflexion of the foot at the ankle during the swing phase.
- B. control the rate of plantar flexion of the foot at the ankle during early stance phase.
- C. provide a major portion of force producing plantar flexion of the foot at the ankle during late stance phase.
- D. A and B above are correct.
- E. A, B, and C above are correct.

98. During normal walking, the gluteus medius and gluteus minimis muscles

- A. control the adductory movement that occurs between the pelvis and thigh at the hip joint during stance phase.
- B. assist in the production and control of the medial and lateral rotatory movements that occur at the hip joint during the swing and stance phases.
- C. provide the major force extending the thigh at the hip during early stance phase.
- D. A and B above are correct.
- E. A, B, and C above are correct.

99. The flexor hallucis longus muscle is most active during

- A. early swing phase
- B. late swing phase
- C. early stance phase
- D. late stance phase

heel strike

100. A 25 year-old human female states that she has a very regular menstrual (uterine) cycle that is 24 days in length. The projected time of ovulation for this woman would be about the

- A. 14 th day following the beginning of her last menstrual period.
- B. 12 th day following the end of her last menstrual period.
- C. 12 th day following the beginning of her last menstrual period.
- D. 10 th day following the end of her last menstrual period.
- E. 10 th day following the beginning of her last menstrual period.

24 - 14 = 10

1. At the time of initiation of implantation in the human

- ☒ A. the endometrium is in the proliferative phase.
- ☒ B. the predominant ovarian hormone is progesterone.
- ☒ C. the conceptus is approximately one day "old" (post fertilization).
- ☐ D. A and B above are correct.
- ☐ E. A, B, and C above are correct.

102. The cells that result from the meiotic process in the human male

- ☒ A. are very similar to one another morphologically.
- ☒ B. determine the genetic sex of the zygote that results from the fertilization of the gamete produced by the female.
- ☒ C. are capable of taking part in the fertilization of the gamete produced by the female.
- ☐ D. A and B above are correct.
- ☐ E. A, B, and C above are correct.

103. Which of the following structures is (are) a portion of the conceptus?

- ☒ A. Fetus
- ☒ B. Placenta
- ☒ C. Decidua basalis *endometrium*
- ☒ D. A and B above are correct.
- ☐ E. A, B, and C above are correct.

104. The zona pellucida

- ☒ A. is an impenetrable barrier to spermatozoa at the time of ovulation.
- ☒ B. assists in the timing of the human implantation process.
- ☒ C. surrounds the secondary oocyte and the corona radiata.
- ☐ D. A and B above are correct.
- ☐ E. A, B, and C above are correct.

105. Which of the following is (are) derived from the mesodermal ~~germ~~ layer?

- ☒ A. deep back muscles
 - ☒ B. bones of appendicular skeleton
 - ☒ C. nerve cells
 - ☐ D. A and B above are correct.
 - ☒ E. A, B, and C above are correct.
- 2015*

Questions 106 to 108 refer to the diagram 1.

106. Formed from the trophoblast.

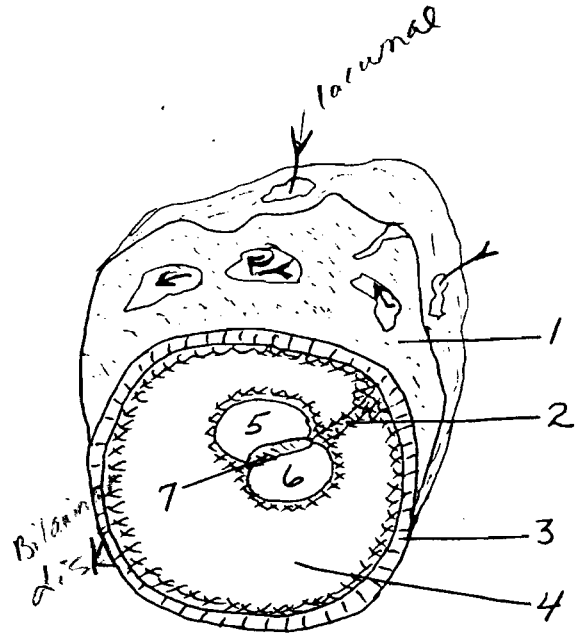
- A. 1.
- B. 2.
- C. 3.
- D. A and B above are correct.
- E. A, B, and C above are correct.

107. Formed from the embryoblast

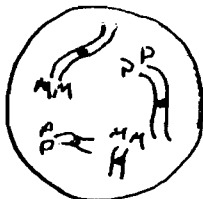
- A. 1.
- B. 2.
- C. 7
- D. A and B above are correct
- E. A, B, and C above are correct

108. Lined by extraembryonic mesoderm

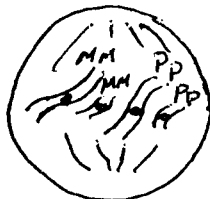
- A. 4.
- B. 5.
- C. 6.
- D. A and B above are correct
- E. A, B, and C are correct.



109. A hypothetical animal species possesses two pairs of chromosomes as its normal genome. The female gametes demonstrate a life history that is the same as those of the human. Which of the following diagrams depicts the gamete produced by the female as it exists between the time of ovulation and fertilization.



A



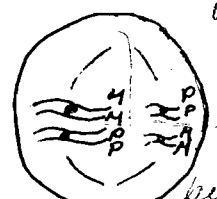
B



C



D



E

hasn't completed
2nd meiotic
div

before
meiosis
I complete

10. An embryo was exposed to thalidomide at the middle of the "critical period" of development for the upper limb. (Thalidomide is very toxic to proliferating cell populations and causes massive cellular injury and death.) Which of the following statements is (are) correct?

- A. The shoulder region would be damaged more than the hip region.
- B. The hip region would be damaged more than the foot region.
- C. The foot region would be damaged more than the hand region.
- D. A and B above are correct
- E. A, B, and C above are correct.

111. Which of the following statements is (are) correct?

- A. A dermatome may be included in more than one cutaneous nerve area.
- B. A cutaneous nerve area may include portions of more than one dermatome.
- C. A dorsal root ganglion supplies more than one dermatome.
- D. A and B above are correct.
- E. A, B, and C above are correct.

112. The flexor digitorum profundus is derived from the

- A. anterior premuscle mass of the forearm.
- B. posterior premuscle mass of the forearm.
- C. myotomes related to cervical somites 6, 7, and 8.
- D. A and B above are correct.
- E. A, B, and C are correct.

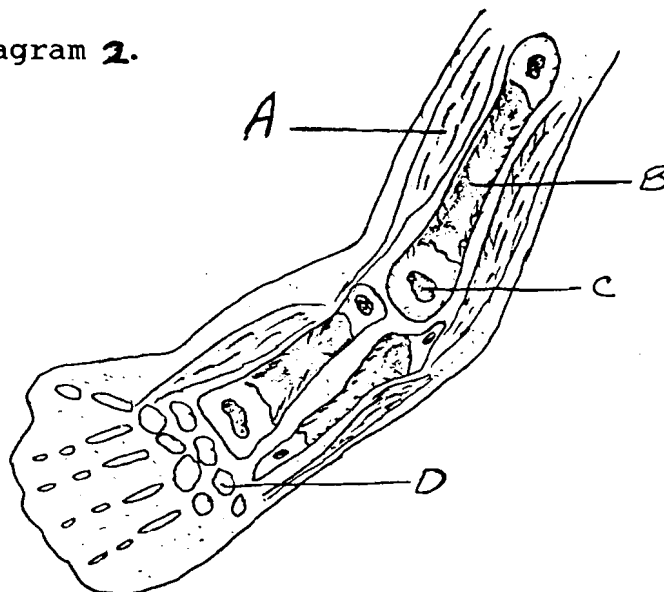
Questions 113 to 114 refer to diagram 2.

113. Primary center of ossification

- A.
- ☒ B.
- C.
- D.
- E.

114. Derived from sclerotomes and myotomes of regional somites.

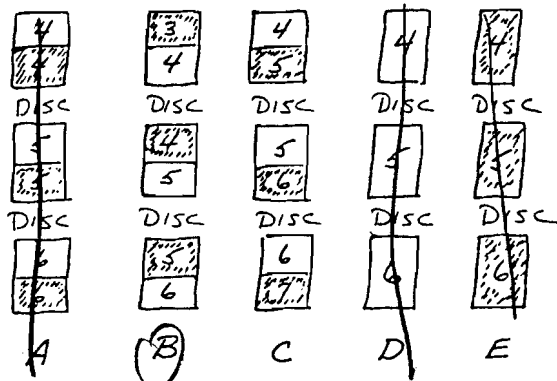
- A.
- B.
- C.
- ☒ D.
- E.



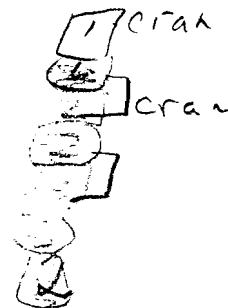
E. NOT SHOWN OR LABELLED

2

115. Which of the following diagrams depicts the correct development of the vertebral column from segmental somites?



SCLEROTOME
2 CRANIAL
2 CAUDAL



116. Muscles derived from the mesectoderm of the first branchial arches include the

- A. muscles of the larynx and pharynx.
- B. muscles of mastication.
- C. muscles of the tongue.
- ☒ D. A and B above are correct
- E. A, B, and C above are correct.

7. The parathyroid glands situated near the inferior portion of the lateral lobes of the thyroid gland are usually derived from the

- A. dorsal "wing" of the third pharyngeal pouch.
- B. ventral "wing" of the third pharyngeal pouch.
- ~~C. dorsal "wing" of the fourth pharyngeal pouch.~~
- ~~D. ventral "wing" of the fourth pharyngeal pouch.~~
- ~~E. None of the above.~~

118. Within each branchial arch, the mesenchyme gives rise to an aortic arch vessel and to

- A. a muscle mass.
- B. a cartilaginous element.
- C. nerve cells of related cranial nerves.
- ~~D. A and B above are correct.~~
- ~~E. A, B, and C above are correct.~~

119. A patient is found to have glandular tissue situated in the tongue musculature just superior to the body of the hyoid bone. This tissue would most likely be related to the

- A. superior parathyroid glands.
- B. inferior parathyroid glands.
- C. thymus.
- ~~D. thyroid gland.~~
- ~~E. None of the above.~~

120. The glandular tissue which originates in the pharyngeal region and migrates the furthest caudally in the body is related to the

- A. pharyngeal pouch I.
- B. pharyngeal pouch II.
- ~~C. pharyngeal pouch III.~~
- D. pharyngeal pouch IV.
- E. pharyngeal pouch V.

11. A mother tells you that her child's eyes do not seem to open as wide as other children and adults she sees. Upon examination, you also note that the child seems to be unable to direct its gaze upwards. The child has no history of postnatal injury or major illness. The likely cause(s) of the findings include developmental defects related to the

- A. facial nerve and/or related muscles.
- ☒ B. oculomotor nerve and/or related muscles.
- C. ophthalmic division of trigeminal nerve and/or related muscles.
- D. A and B above are correct.
- E. A, B, and C above are correct.

122. Which of the following form a boundary of the intraretinal space?

- A. Receptor cells of the retina (rod and cones)
- B. Pigmented cells of choroidal layer
- ☒ C. Peripheral tissue of vitreous body
- D. A and B above are correct.
- E. A, B, and C above are correct.

123. Blood vessels normally visible on the free (internal) surface of the retina are

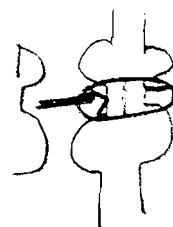
- A. derived from the choroidal blood vessels.
- ☒ B. may be partially occluded by increased pressure in the subarachnoid space surrounding the distal portion of the optic nerve.
- C. are the major site of resorption of aqueous humor.
- D. A and B above are correct.
- E. A, B, and C above are correct.

124. Derived from the otic vesicle

- A. Cochlear duct and organ of Corti
- ☒ B. Semicircular ducts
- ☒ C. Foot plate of stapes
- D. A and B above are correct.
- E. A, B, and C above are correct.

125. The tympanic membrane (ear drum) contains tissue derived from the

- A. mesenchyme of the first and second branchial arches.
- ☒ B. ectoderm of the second branchial cleft (groove).
- ☒ C. endoderm of the second pharyngeal pouch.
- D. A and B above are correct.
- ☒ E. A, B, and C above are correct.



Questions 126 to 128 refer to diagram 5.

126. Site of formation of intraembryonic mesoderm

- A. 2.
- B. 3.
- C. 4.
- D. 5.
- E. 9.

C

A

127. Derived partially or totally from epiblastic cells.

- A. 9.
- B. 8.
- C. 6.
- D. A and B above are correct.
- E. A, B, and C above are correct.

E

C

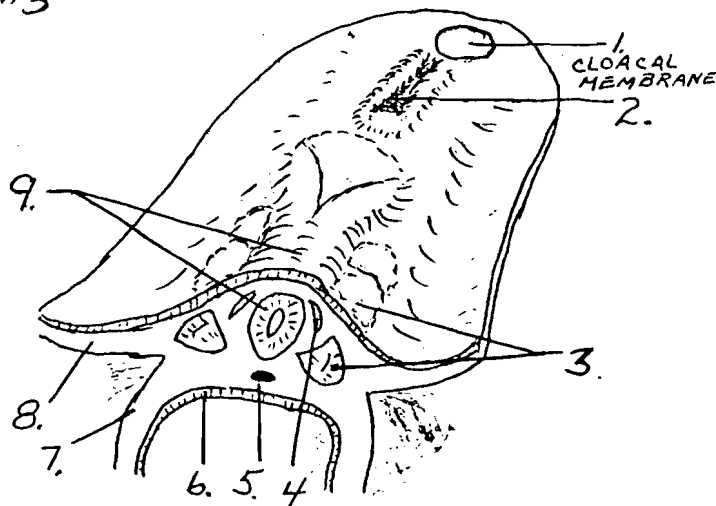
128. Development induced by notochordal process and/or notochord.

- A. 9.
- B. 3.
- C. 2.
- D. A and B above are correct
- E. A, B, and C above are correct

C

E

#3



Id # _____ Class: GROSS ANATOMY Course #: GROSSFC
Name: _____ Time: _____

Test Key: EEEDBDDDDA DEEDDCCEED ACCEABCEEB EACLEDCCDB ACADEEDDED
Items 1-50: 1234567890 1234567890 1234567890 1234567890 1234567890
Student's Answers: A*DC***C* A**EAAA** C***C*A** *****EB** ***BA**DEC

Test Key: AADCBECEC CAEEABECA ECEDCACDEA ECECCDEEC AEDBAEDDDE
Items 51-100: 1234567890 1234567890 1234567890 1234567890 1234567890
Student's Answers: *B*EC**B** DB***B**AD *B*C****D *****E* C*****ACD*

Test Key: DEEDDEEACC CAEESEADDC EABDANEI
Items 101-150: 1234567890 1234567890 1234567890 1234567890 1234567890
Student's Answers: D*****D DE*D**E** *BA*EC*E

Q #'s 9,11,15,18,42,45,47,50,66,103,111 = Bonus